

Abstract of the Disclosure

A method and apparatus for interrogating a target having a plurality of plasmon resonant particles (PREs) distributed in the target are disclosed. In the method, a field containing the target is illuminated, and one or more spectral emission characteristics of the light-scattering particles in the field are detected. From this data, an image of positions and spectral characteristic values in the field is constructed, allowing PREs with a selected spectral signature to be discriminated from other light-scattering entities, to provide information about the field. Also disclosed are a novel PRE composition for use in practicing the method, and a variety of diagnostic applications of the method.